

REMARKS

Claims 1-11 are pending in the present application. Claims 12-20 have been canceled. Claim 1 has been amended.

Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the remarks appearing below, which Applicants believe place the application in condition for allowance.

Objections to Claims

The Examiner has objected to claim 1 for the following informalities: 1) in clause (c), line 2, the phrase "said doped epitaxial layer" lacks proper antecedent basis in the claim and 2) in clause (e), line 1, the word "based" should be changed to "base."

Applicants agree and have amended the claims to eliminate these informalities. Therefore, Applicants respectfully request that the Examiner withdraw the present objections.

Rejections Under 35 U.S.C. § 102

Blouse et al.

The Examiner has rejected claims 1-3 and 5-8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,008,207 to Blouse et al., stating that Blouse et al. disclose a bipolar device containing all of the limitations of these claims. Applicants respectfully disagree.

Regarding independent claims 1 and 7, each of these claims, since prior to the present Office Action, requires among other things the limitation of a "conductor ring formed in said doped epitaxial extrinsic base layer surrounding said lower portion of said emitter." In this connection, the Examiner asserts that doped extrinsic base layer 36 of the Blouse et al. device contains the recited conductor ring because base layer 36 "is a conductor; therefore, a conductor ring is considered as a thin top portion of the doped epitaxial extrinsic base layer 36." Office Action, page 3, lines 2-3.

Applicants respectfully assert that the language of claims 1 and 7, particularly the limitation that the conductor ring is "formed in" the base layer, explicitly requires that conductor ring be a region of the base layer that contains material that has been physically altered relative to the virgin material of the overall base layer. [Emphasis added.] Applicants support this assertion with a plain and ordinary meaning of the word "form" as obtained from the Encarta online dictionary. (A copy of a Webpage from the Encarta online dictionary is attached.) The

Encarta definition of “form” is “to make something: to make or construct something”

Therefore, something that is “formed in” another thing is made or constructed in that other thing. In the context of the present invention, it is clear to someone skilled in the art that a conductor ring is a physical thing, so that “formed in” means something that has been physically made or constructed in another physical structure, i.e., the base layer.

In other words, the “formed in” limitation requires the base layer to have a physically distinct region that is the conductor ring. For example, in the present application, the conductor ring 148 is defined by a physically distinct silicidated region 176 that is formed in base layer 164 by silicidation of the base layer. The silicidated region 176 is physically distinct from the rest of base layer 164 because the materials of the two regions are physically different from each other.

Clearly, FIG. 1M of the Blouse et al. patent does not show any physically distinct region in base layer 36 that could reasonably be considered a conductor ring. Nor do Blouse et al. so much as suggest that base layer 36 may be modified to include a physically distinct conductor ring. Indeed, Blouse et al. are completely silent on base layer 36 containing a physically distinct conductor ring. Consequently, the Blouse et al. patent cannot anticipate independent claims 1 and 7, nor claims 2, 3, and 5-8 that depend therefrom.

The Examiner is respectfully reminded that in construing claim terminology, the U.S. Patent and Trademark Office affords claim terminology its broadest reasonable interpretation that is “consistent with the interpretation that those skilled in the art would reach.” MPEP § 2111 (*citing In re Cartright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)). Thus, an examiner is not free to simply apply the broadest interpretation of claim terminology, but rather the examiner must adjust the breadth of the terminology to the breadth that those skilled in the art would give the terminology “taking into account whatever enlightenment by way of definition or otherwise that may be afforded by the written description contained in the applicant’s specification.” *Id.* (*citing In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) [emphasis added]). In the present case, it is Applicants’ position that those skilled in the art, having reviewed and understood the present application, would recognize that the “formed in” limitation of claims 1 and 7 requires the presence of a physically distinct conductor ring within the base layer. Again, this is a feature that Blouse et al. clearly do not disclose or suggest.

For at least the foregoing reasons, Applicants respectfully request that the Examiner withdraw the present anticipation rejection.

Ryum et al.

The Examiner has rejected claims 10 and 11 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,362,066 to Ryum et al., stating that Ryum et al. disclose a bipolar device containing all of the limitations of these claims. Applicants respectfully disagree.

Independent claim 10 requires among other things “a doped epitaxial extrinsic base layer . . . having an aperture formed therein” and “an emitter trench landing pad remnant located on said doped epitaxial extrinsic base layer.” [Emphasis added.] Referring to Ryum et al. FIG. 6, in making the present rejection the Examiner asserts that layer 123 is the doped epitaxial base layer of the Ryum et al. device that corresponds to the doped epitaxial extrinsic base layer of claim 10 and that ring 191a corresponds to the emitter trench landing pad remnant of claim 10.

Applicants note that in order to satisfy the limitation of claim 1 that the emitter trench etch landing pad being located on the doped epitaxial extrinsic base layer, layer 123a must be the doped epitaxial extrinsic base layer. Layer 123b cannot satisfy this limitation since ring 191a, which is a remnant of masking film 191, is not on layer 123b. Rather, layer 123b surrounds ring 191a. This being so, layer 123a does not contain an aperture as required of the doped epitaxial extrinsic base layer in claim 10. This is so because in the context of semiconductor layers, it is well-known that the word “aperture” means an opening that extends through a layer. Clearly, the Ryum et al. layer 123a does not include an opening that extends therethrough. At most, layer 123a may be said to include a trench formed during etching of the emitter trench. Since Ryum et al. do not disclose or suggest at least the foregoing limitations of claim 10, the Ryum et al. patent cannot anticipate independent claim 10, nor claim 11 that depends therefrom.

For at least the foregoing reasons, Applicants respectfully request that the Examiner withdraw the present rejection.

Rejection Under 35 U.S.C. § 103

The Examiner has rejected claims 4 and 9 under 35 U.S.C. § 103(a) as being obvious in view of the Blouse et al. and Ryum et al. patents, discussed above, stating that Blouse et al. disclose a bipolar device containing all of the limitations of these claims except for the doped epitaxial extrinsic base layer containing a silicidated region. The Examiner then states that Ryum et al. disclose forming a silicide layer on a doped extrinsic base layer and asserts that it

would have been obvious to a person having ordinary skill in the art at the time of the invention to provide layer 36 of the Blouse et al. device with a silicidated region in the manner of Ryum et al. Applicants respectfully disagree.

The respective devices of the Blouse et al. and Ryum et al. patents are constructed very differently from one another and are fully functional without needing various features of the other device. Certainly, there is no motivation expressed or implied in either of these patents that even suggests that it is necessary or even desirable to provide layer 36 of the Blouse et al. device with a silicidated region in the manner of the Ryum et al. layer 129. Applicants assert that the only motivation to combine the Blouse et al. and Ryum et al. references in the asserted manner is to use an improper amount of hindsight of the present claims. Applicants recognize that a certain level of hindsight reconstruction is unavoidable in the examination of claims by the U.S. Patent and Trademark Office. However, it is Applicants' belief that due to the very different structures of the devices of the two patents, coupled with the fact that the designers of the Blouse et al. device were surely aware of the common practice of silicidation but chose not to provide layer 36 with a silicidated region, there truly is no motivation to combine the references in the manner cited other than the motivation that comes from pure hindsight of the present claims.

In addition, Applicants assert that if the Blouse et al. device were modified by silicidating a region of layer 36 in the manner of the Ryum et al. teachings, the functioning of the Blouse et al. device would be compromised, if not destroyed. This is so because the silicidation of layer 36 would occur prior to a number of subsequent processing steps that require that the device be subject to high temperatures that would essentially degrade or destroy the silicidated region. Since the silicidation of the layer 36 of the Blouse et al. device would negatively affect the proper functioning of that device, those skilled in the art would not be motivated to combine the Blouse et al. and Ryum et al. patents in the manner asserted.

Furthermore, as discussed above relative to the anticipation rejection in view of the Blouse et al. patent, Blouse et al. fail to disclose or suggest the limitation of each of claims 4 and 9 that layer 36 contains a formed conductor ring.

For at least the foregoing reasons, Applicants respectfully submit that the present rejection is improper and respectfully request that the Examiner withdraw the rejection.

CONCLUSION

In view of the foregoing, Applicants submit that claims 1-11, as amended, are in condition for allowance. Therefore, prompt issuance of a Notice of Allowance is respectfully solicited. If any issues remain, the Examiner is encouraged to call the undersigned attorney at the number listed below.

Respectfully submitted,

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Attachment

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A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

form

form [fawrm]

noun (plural forms)

Definitions:

1. variety of something: a type of something that has various different types

- a rare form of cancer

2. manifestation: the particular way that something is or appears to be

- bonuses in the form of extra vacation days

3. basic structure: the shape or structure of a thing that gives it its distinctive character, considered apart from its content, color, texture, or composition

4. shape of something: the shape or appearance of a thing that makes it identifiable

- a constellation in the form of a diamond

5. indistinct shape: a shape like a person or other living thing that cannot be clearly made out

- a shadowy form in the distance

6. document: a document, usually with blank spaces for answers or information

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See sheet 3 of 4 for proper contextual definition

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to be supplied
 • *fill out the form*

7. condition of somebody or something: the condition of an organization, team, performer, athlete, or animal, with regard to fitness, health, and ability to perform well
 • *a violinist at the top of her form*

8. track record: the previous record of a horse, athlete, or team

9. behavior: behavior or manners with reference to propriety
 • *It's considered bad form to cheat at games.*

10. formula: a fixed set or order of words or procedures, e.g. in a religious ceremony or a legal document

11. BIOLOGY subdivision of species: a subdivision of a species, ranking below variety, usually indicating a minor difference among members, e.g. in color

12. ARTS outline structure: the structure, design, or arrangement of a work of art or piece of writing, as opposed to its content

13. ARTS mode of expression: a fixed mode of literary or musical expression
 • *a strict adherence to sonata form*

14. ARTS INDUSTRY mold or frame: a mold, frame, or model within which or around which something can be shaped
 • *concrete forms*

15. DRESS human shape: a model of a human body or torso, used for fitting or displaying clothes

16. FURNITURE bench: a long low wooden seat or bench with no back rest

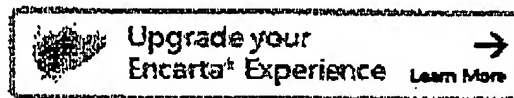
17. U.S. PRINTING printing template: a body of typographical elements assembled in a chase in preparation for printing.
Canadian term forme

18. LINGUISTICS word in relation to its root: a word considered in relation to its root or the word it is derived from

- Going Tribal, on Discovery
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19. LINGUISTICS look or sound of

word: the way a word is written or how it sounds, as opposed to its meaning

20. U.K. EDUCATION British school

grade: in the United Kingdom, a class or grade in school

verb (past and past participle formed, present participle forming, 3rd person present singular forms)

Definitions:**1. transitive and intransitive verb give**

shape to something: to give a shape or arrangement to something, or take shape

- *A circle of onlookers formed around the injured man.*

2. transitive and intransitive verb start to

exist: to cause something to develop or exist, or begin to develop or exist, especially as part of a natural process

- *Crystals began to form at the bottom of the jar.*

3. transitive verb set something up: to establish or organize something

- *form a task force to monitor the impact of deregulation*

4. transitive verb make something: to make or construct something, often by arranging or combining component parts

- *The plural is formed by adding an "s."*

5. transitive verb conceive of

something: to develop an opinion, impression, or idea in the mind

- *not enough information to form an opinion*

6. transitive verb cause something to

develop: to influence somebody strongly through teaching, discipline, or example, and cause a particular personal development

- *an early life in the country that formed his quiet nature*

7. transitive verb create something: to

acquire or establish and develop

MSN Encarta - Dictionary - form

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something intangible such as a habit or relationship

- *form an alliance with other family members*

8. transitive verb serve as something: to constitute or be a basic element or characteristic of something

- *a mountain range forming a natural boundary between the two countries*

[13th century. Via French < Latin *forma* "mold, shape, beauty"]

- **form-a-bleadj**

take form to become visible, distinct, or discernible

- *A plan started to take form in his mind.*

true to form as could be expected judging from somebody's past behavior

- *True to form, they were exactly twenty minutes late.*

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